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REMARKS

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Claims 1 to 25 are pending.

Claim 1 has been amended herein.

Claims 1 and 13 are the only independent claims.

I. Amendments to the Specification

The paragraph beginning at Page 1, line 31 is amended to correct a minor typographical error. No new matter has been added by this amendment.

II. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1 to 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,975,875 (hereinafter "Gray"). Applicants respectfully traverse this rejection.

Applicants' invention involves a system of DMA/processing unit pairs that are controlled and/or coordinated so that all data that must be transferred within specific time constraints is transferred on time. The present invention achieves this by allowing the processing unit's programmable priority to be adjusted above or below the corresponding DMA machine's fixed priority. In other words, interleaved between the fixed priorities of the DMA machines are priority levels to which the processing unit may be assigned. See, for example, Applicants' FIG. 3 and Applicants' Specification at Page 8, line 26 to Page 9, line 16.

In contrast, the relied upon reference, Gray, teaches a single DMA engine 118, containing a data reservoir 202, which receives requests for data from devices 220 or 221 based on

BUR920030023US1
PATENTS

arbitration from a device interface 250. As shown in Gray's FIG. 6 and described in Col. 12, lines 5-59, priority between the devices for accessing the DMA engine may be determined and assigned by the device interface. That is, as described above with respect to Gray's FIG. 6, the priority of access is assigned among the devices and does not the interleaving of priorities of the DMA machines and processing units of Applicants' independent Claim 1. It is therefore unclear to Applicants, as Gray does not address the relationship between these priorities, how it would be obvious "that depending on the whether the device has high or low bandwidth requirements then the DMA engine will allocate the memory bandwidth efficiently" (Office Action, Page 2, final paragraph) or even how this passage relates to Applicants' independent Claim 1. Applicants respectfully request clarification. Absent any such explanation and reasoning supporting the Examiner's otherwise unfounded conclusion, Applicants respectfully request withdrawal of the rejection.

Despite the above distinction and solely to expedite prosecution, Applicants have herein amended Claim 1 to make explicit what was implicit. More specifically, Claim 1 has been amended to emphasize and clarify that "the programmable priority of the processing unit allows priority allocation between the fixed priority of the one or more DMA machines and the programmable priority of the processing unit to be adjusted dynamically." This amendment is not intended to alter the scope of Claim 1 but rather to highlight the distinction between Applicants' invention and Gray. No new matter is added by this amendment.

BUR920030023US1
PATENTS

To be clear, Gray does not appear to teach or indicate allowing "priority allocation between the fixed priority of the one or more DMA machines and the programmable priority of the processing unit to be adjusted dynamically" (emphasis added) as recited in amended independent Claim 1.

Accordingly, as Gray does not teach or suggest all the claim features and the Examiner has not provided reasoning as to why these features would be obvious in view of Gray, Applicants respectfully request the Examiner reconsider and withdraw the rejection of independent Claim 1. Claims 2-12 are dependent on amended independent Claim 1 and are submitted as allowable for at least the same reasons as Claim 1.

Regarding the rejection of independent Claim 13, Applicants respectfully submit the Examiner has not addressed the each of the recited features of this claim in the current Office Action. Applicants further submit Gray, as read by Applicants, does not appear to teach or suggest the Claim features of independent claim 13.

It appears the Examiner has rejected independent Claim 13 by citing the claim features of independent Claim 1 and using the same rejections. However, the Examiner has failed to address features of Applicants' independent Claim 13, namely:

a bus, coupled to the processing unit and the one or more DMA machines, and adapted to provide communication between each of the one or more DMA machines, the processing unit and a data resource; and

a dynamic priority allocation circuit adapted to allocate priority of access to

BUR920030023US1
PATENTS

the data resource between each of the one or more DMA machines and the processing unit and further adapted to assign a fixed priority of access to memory bandwidth to the one or more DMA machines.

These claim features may be seen at least in Applicants' FIG. 1. FIG. 1 specifically shows a bus 112 coupled to a processing unit 102 and one or more DMA machines 106-110. FIG. 1 also shows a data resource 104 (see, for example, Applicants' Specification at Page 4, lines 15-17). Additionally, FIG. 1 shows a dynamic priority allocation circuit 116, which is described in Applicants' Specification at Page 6, line 14 to Page 8, line 25.

The Examiner has generally cited the entire Gray reference with "(Abstract, cols. 2-12)" on Page 2 of the current Office Action, but fails to point to these features and Applicants' reading of the reference does not reveal them either. Applicants respectfully object to the Examiner's non-specific rejection. Further, it is specifically noted that the control bus 111 and memory bus 112 of Gray's FIG. 1 are not configured or arranged to allow "a bus, coupled to the processing unit and the one or more DMA machines, and adapted to provide communication between each of the one or more DMA machines, the processing unit and a data resource," in contrast to Applicants' independent Claim 13.

Accordingly, as the Examiner has not specifically addressed the features of independent Claim 13, Applicants respectfully submit the rejection of this claim is improper and request the Examiner withdraw the rejection. Further, as Applicants have shown, the Gray reference fails to show these

BUR920030023US1
PATENTS

features and the Examiner provides no indication why they would be obvious in view of the reference. Applicants again respectfully request the Examiner reconsider and withdraw this rejection.

Claims 14-25 are dependent on amended independent Claim 13 and are submitted as allowable for at least the same reasons as Claim 13.

Accordingly, reconsideration and withdrawal of the 35 U.S.C. § 103 rejections of Claims 1-25 is respectfully requested.

III. Conclusion

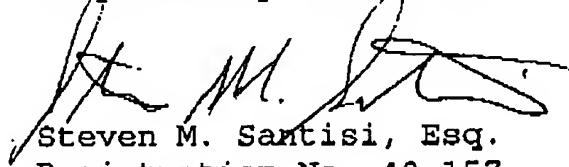
Applicants believe all pending claims are now in condition for allowance, and respectfully request reconsideration and allowance of the same. Applicants have filed herewith an appropriate Request for Extension of Time. Applicants do not believe any additional Request for Extension of Time is required but if it is, please accept this paragraph as a Request for Extension of Time and authorization to charge the requisite extension fee to Deposit Account No. 04-1696.

Applicants do not believe any other fees are due regarding this amendment. If any other fees are required, however, please charge Deposit Account No. 04-1696. The

BUR920030023US1
PATENTS

Applicants encourage the Examiner to telephone Applicants' attorney should any issues remain.

Respectfully Submitted,



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Tarrytown, New York